Stoller
Grand Junction Office established 1959

50-08-08
Log Data Report

Borehole Information:

Borehole: 50-08-08 (299-W10-176)			Site: T Tank Farm		
Coordinates (Hanford)		GWL (ft)[1]: N/A[2]		GWL Date: N/A	
North	East	Drill Date	TOC[3] Elevation	Total Depth (ft)	Type
43432	-75777	Apr 1978	N/A	96	Cable Tool

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Schedule 40	0.0	6 5/8	6	0.280	+0.0	96

The logging engineer measured the 6-in. casing using a steel tape. Measurements were rounded to the nearest 1/16 in. Casing thickness was based on published values for ASTM schedule-40 steel pipe.

Borehole Notes:

The borehole coordinates, elevation, and borehole depth information listed above are from *Hanford Wells* (Chamness and Merz 1993). Zero reference = top of casing. Top of casing is cut mostly even.

Logging Equipment Information:

Logging System:	Gamma 2F (NMLS)	Type:	Neutron moisture gauge
Calibration Date:	11/13/2001	Calibration Reference:	GJO-2002-291-TAR
		Logging Procedure:	MAC-HGLP 1.6.5, Rev. 0

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	1	2	3	4	5
Date	10/16/02	10/17/02	10/17/02		
Logging Engineer	Spatz	Spatz	Spatz		
Start Depth (ft)	95.5	53.0	45.0		
Finish Depth (ft)	52.0	0.25	35.0		
Count Time (sec)	N/A	N/A	N/A		
Live/Real	R	R	R		
Shield (Y/N)	N/A	N/A	N/A		
MSA Interval (ft)	0.25	0.25	0.25		
ft/min	1 ft/min	1 ft/min	1 ft/min		
Pre-Verification	BF013CAB	BF016CAB	BF016CAB		
Start File	BF015000	BF016000	BF016211		
Finish File	BF015174	BF016210	BF016251		
Post-Verification	BF015CAA	BF016CAA	BF016CAA		
Depth Return Error (in.)	0	0	0		
Comments	No fine-gain adjustment.	No fine-gain adjustment.	Repeat section.		

Logging Operation Notes:

Data were collected using Gamma 2, HO 68B-3572. The logging vehicle was set up facing north. A centralizer was installed on the sonde. NMLS pre-run and post-run verification spectra were collected at the beginning and end of each day.

Preliminary gross count plots were prepared in the field.

Analysis Notes:

Analyst:	McCain	**Date:**	10/22/02	**Reference:**	GJO-HGLP 1.6.3, Rev. 0

NMLS spectra were processed in batch mode using APTEC Supervisor to generate files of gross counts as a function of spectrum file name and depth. An EXCEL spreadsheet was used to prepare preliminary gross count plots and to calculate and plot gross count rates. Gross count rates for the verification spectra were within acceptance criteria. Because this log is part of a group of four boreholes with differing casing configurations, no attempt was made to calculate moisture content. The log plots are qualitative; the primary use is correlation. In general, increasing neutron count rates are indicative of increasing moisture content.

Log Plot Notes:

NMLS gross count rates are plotted as a function of depth, using EXCEL's graphing capabilities. Logs are plotted at a consistent depth and count rate scale to facilitate comparison and correlation.

Results and Interpretations:

High neutron count rates occurred at 2.25 ft and between 5 and 18 ft. An abrupt decrease in neutron count rates between 18 and 20 ft occurred well above the base of the tank farm excavation. In the lower part of the backfill, neutron peaks occurred at 28.5 and 35.25 ft. The base of the tank farm excavation is indicated by a decrease in neutron count rates at about 41.5 ft. Thin beds of fine material are indicated by neutron peaks at 51.25, 58.75, and 66.75 ft. Increasing neutron counts beginning at approximately 82 ft probably correspond to finer material in the early Palouse unit. The decrease in neutron counts at approximately 91.5-ft depth appears to correlate with a caliche layer at the top of the Plio-Pleistocene unit.

References:

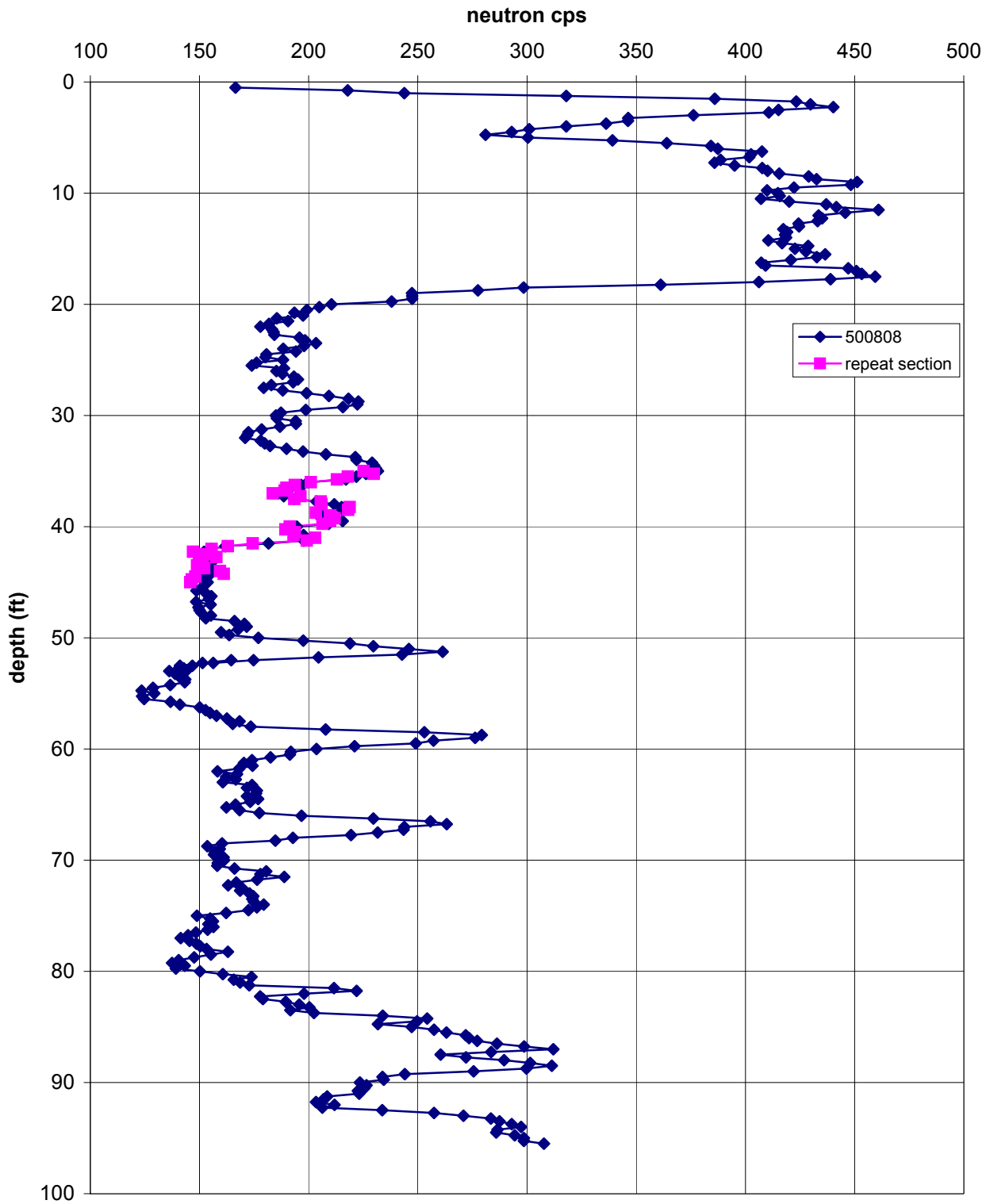
Chamness, M.A., and J.K. Merz, 1993. *Hanford Wells*, PNL-8800, prepared by Pacific Northwest Laboratory for the U.S. Department of Energy, Richland, Washington.

U.S. Department of Energy, 1999. *Hanford Tank Farms Vadose Zone, Tank Summary Data Report for Tank T-106*, GJ-HAN-120, prepared by MACTEC-ERS for the Grand Junction Office, Grand Junction, Colorado, June.

---

[1] GWL – groundwater level
[2] TOC – top of casing
[3] N/A – not applicable

50-08-08


neutron cps
100
150
200
250
300
350
400
450
500
depth (ft)
0
10
20
30
40
50
60
70
80
90
100
500808
repeat section